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REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed June 9, 2004. Claims 1-30 have been cancelled, claims 31-50 have been withdrawn, and claims 51-76 have been canceled. Claims 77-104 remain pending in the present application.

In an interview with Examiner Leonid Fastovsky and the Examiner's Supervisor, Robin Evans, on June 21, 2004, claim 77 was deemed to be allowable. Claims 93-94 and 96-100 remain rejected under 35 U.S.C. § 102 and claims 95, and 101-104 remain rejected under 35 U.S.C. § 103. Applicants traverse all of the rejections of the Office Action. Reconsideration and allowance of the subject application and presently pending claims 77-104 is respectfully requested.

I. Examiner Interview Summary

Examiner Leonid Fastovsky, Supervisor Robin Evans, Richard Abbott, and Peter Nieves participated in an examiner interview on June 21, 2004. Agreement was accomplished among the participating parties in regards to claim 77. Examiner Fastovsky and Supervisor Evans indicated that claim 77 did contain allowable subject matter. Specifically, the Examiner and Supervisor referenced the steps of: selecting a proportion of said metallic component and said at least one reactant gas, so that when combined said desired resistivity of said resistive heater layer results; and, promoting reaction of said metallic component and said reactant gas, thereby combining

said metallic component and said reactant gas, resulting in a free metal and reaction product. Since independent claim 77 is allowable, as discussed above, pending dependent claims 78-92 should be allowed as a matter of law for at least the reason that they depend from an allowable claim. In re Fine, 5 U.S.P.Q. 2d 1596, 1608 (Fed. Cir. 1988). Applicants wish to express their sincere appreciation for the time that Examiner Fastovsky and Supervisor Evans spent with Applicants' Attorney and inventor Richard Abbott during the telephone discussion on June 21, 2004.

II. Response to Claim Rejections Based On Anticipation

In the Office Action, claims 93-94 and 96-100 have been rejected under 35 U.S.C. § 102(b). Specifically, these claims have been rejected as being anticipated by U.S. Patent No. 4,808,490 to Tsukuda *et al.* (hereafter, "Tsukuda").

As the Examiner is aware, "Anticipation can only be established by a single prior art reference which discloses each and every element of the claimed invention." *Structural Rubber Products Co. v. Park Rubber Co.*, 749 F.2d 707, 226 USPQ 1264 (Fed. Cir. 1984). Further, "Absence from a cited reference of any element of a claim of a patent negates anticipation of that claim by the reference." *Kloster Speed Steel AB v. Crucible, Inc.*, 796 F.2d 1565, 260 USPQ 81 (Fed. Cir. 1986), *on rehearing*, 261 USPQ 160 (Fed. Cir. 1986). Thus, even if a single element found in Applicants' claim is not identically and exactly disclosed in prior art relied upon by the Examiner, the Examiner's rejection of the claims under 35 USC 102(b) is improper.

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Applicants respectfully submit that Tsukuda fails to disclose all elements of the rejected claims for the reasons that follow.

A. Claim 93

Independent claim 93 reads:

A resistive heater having a controlled resistivity, comprising:

a resistive layer having a controlled resistivity, said resistive layer further comprising a metallic component and one or more *reaction products*, resistivity of said resistive layer being a combined resistivity of said metallic component and said one or more reaction products, resistivity of said reaction products being controlled by composition of a reactant gas and said metallic component that are combined to create said resistive layer; and

a power source coupled to said resistive layer.

(Emphasis Added)

Applicants respectfully submit that Tsukuda fails to disclose at least the above-emphasized element of claim 93. Specifically, Tsukuda fails to disclose a resistive layer having a controlled resistivity, where the resistive layer further comprises a metallic component and one or more reaction products. In rejecting claim 93, the Office Action reads:

Tsukuda teaches a resistive heater (Fig. 1-3) having a controlled resistivity, comprising a resistive layer 22, *the resistive layer comprises a metallic component and a reaction product- NiCr (col. 3, lines 42-45), the resistivity being controlled by a reactant gas (argon and hydrogen, col. 4, line 43), and inherently having a power source because it is used for home appliances (Abstract, lines 7-10).*

(Emphasis Added)

Addressing the above-mentioned, Applicants respectfully submit that Tsukuda does not teach a resistive layer comprising a metallic component and one or more REACTION PRODUCTS. As shown above, the Office Action shows that NiCr is believed to be a reaction product in Tsukuda. In addition, the Office Action cites to column 3, lines 42-45 of Tsukuda, which read:

The resistor layer 22 is then plasma-sprayed on the insulating layer 20. The resistor layer 22 comprises NiCr particles and an insulating ceramic matrix such as Al_2O_3 or $\text{Al}_2\text{O}_3\cdot\text{MgO}$.

Applicants respectfully submit that NiCr is not a reaction product. In fact, Tsukuda does not have a reaction product. Specifically, Tsukuda uses a plasma spraying procedure. In plasma spraying, materials are heated by creating a gaseous plasma. As is shown by column 4, line 43 of Tsukuda, Tsukuda uses Argon and Hydrogen to create a specific plasma temperature, which is demonstrated in Tsukuda by the description of the Argon and Hydrogen being part of the Operation Gas. As is known by those having ordinary skill in the art, Argon is an inert gas and it does not react. Hydrogen is utilized to boost power in the plasma. Specifically, the disassociation and ionization energies of the Hydrogen together with the ionization energy of the Argon forms a high-powered plasma that is used to melt materials, thus the title, Operation Gas. Hydrogen is used to create a reducing plasma,

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specifically, when NiCr and Al₂O₃ are melted and atomized in a gaseous ambient and Al₂O₃ are melted and atomized, in the gaseous ambient the Hydrogen prevents reaction of stray Oxygen with the NiCr, resulting in a "clean" NiCr throughout deposition as part of a coating. Therefore, the NiCr is not a reaction product. In fact, Tsukuda does not have a reaction product in a resistive layer having a controlled resistivity.

Alternatively, in accordance with Applicants invention embodied by claim 93, the resistive layer comprises a metallic component and one or more reaction products, as explained below. To create the resistive layer

Applicants atomize a selected amount and type of metal resulting in molten droplets, and accelerate the droplets. The droplets are subjected to a selected reactant gas that reacts with the molten droplets to form a **metallic component and one or more reaction products of the metallic component.**

As a result, the resistive layer having the controlled resistivity comprises the metallic component and the one or more reaction products. A resistive layer having a controlled resistivity, wherein the resistive layer comprises a metallic component and a reaction product, is not taught by Tsukuda.

Therefore, for at least the above reason, Applicants respectfully request that claim 93 be allowed.

B. Claims 94-104

Applicants respectfully submit that since claims 94-104 depend on independent claim 93, claims 94-104 contain all limitations of independent

claim 93. Since independent claim 93 should be allowed, as argued above, pending dependent claims 94-104 should be allowed as a matter of law for at least this reason. In re Fine, 5 U.S.P.Q. 2d 1596, 1608 (Fed. Cir. 1988).

III. Response To Claim Rejections Based On Obviousness

In the Office Action, claims 95 and 101-104 have been preliminarily rejected under 35 U.S.C. §103(a). It is well established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly or explicitly, all elements/features/steps of the claim at issue. See, e.g., In re Dow Chemical, 5 U.S.P.Q. 2d 1529, 1531 (Fed. Cir. 1988), and In re Keller, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981).

A. Claim 95

In the Office Action claim 95 has been preliminarily rejected under 35 U.S.C. §103(a) as being unpatentable over Tsukuda in view of U.S. Patent No. 3,922,386 to Ros (hereafter, "Ros"). As explained in detail above, Applicants respectfully submit that Tsukuda does not disclose, teach, or suggest a resistive layer having a controlled resistivity, wherein the resistive layer comprises a metallic component and a reaction product. Ros also does not disclose, teach, or suggest this element of claim 95. Therefore, Applicants respectfully submit that claim 95 should be allowed.

B. Claims 101 and 102

In the Office Action claims 101 and 102 have been preliminarily rejected under 35 U.S.C. §103(a) as being unpatentable over Tsukuda in view of U.S. Patent No. 6,069,346 to Hyllberg (hereafter, "Hyllberg"). As explained in detail above, Applicants respectfully submit that Tsukuda does not disclose, teach, or suggest a resistive layer having a controlled resistivity, wherein the resistive layer comprises a metallic component **and** a reaction product. Hyllberg also does not disclose, teach, or suggest this element of claims 101 and 102. Therefore, Applicants respectfully submit that claims 101 and 102 should be allowed.

C. Claims 103 and 104

In the Office Action claims 103 and 104 have been preliminarily rejected under 35 U.S.C. §103(a) as being unpatentable over Tsukuda in view of Ros, and further in view of U.S. Patent No. 5,756,215 to Sawamura (hereafter, "Sawamura"). As explained in detail above, Applicants respectfully submit that Tsukuda does not disclose, teach, or suggest a resistive layer having a controlled resistivity, wherein the resistive layer comprises a metallic component **and** a reaction product. Ros and Sawamura also do not disclose, teach, or suggest this element of claims 103 and 104. Therefore, Applicants respectfully submit that claims 103 and 104 should be allowed.

IV. Prior Art Made of Record

The prior art made of record has been considered, but is not believed to affect the patentability of the presently pending claims.

CONCLUSION

In light of the foregoing amendments and for at least the reasons set forth above, Applicants respectfully submit that all objections and rejections have been traversed, rendered moot and/or accommodated, and that presently pending claims 77-104 are in condition for allowance. Favorable reconsideration and allowance of the present application and the presently pending claims are hereby courteously requested. If in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (603) 668-1400.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Peter A. Nieves", is written over a horizontal line.

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By: _____

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